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ABSTRACT

A study investigated the patterns of question use in Mandarin Chinese-speaking parents' and caregivers' interactions with children, and how they characterize social class differences. Subjects were 10 children, aged 21-23 months, and their families, selected from immunization records in Beijing, China. Parents were all native speakers of Mandarin and were educated at either the high school level or below (working class) or college level or above (intellectuals). Each group contained one female and four male children. Analysis was limited to interactions of the children with individuals who frequently cared for them. Recorded utterances were transcribed and these characteristics of utterances were calculated for each child and adult subject: mean length of utterance; overall frequency of utterances; frequency of caregiver-to-child questions, declaratives, and imperatives; and social class differences found in 10 question types. Results indicate clear social class differences in the relative use of different utterance types in speaking to children, with frequent use of questions and less frequent use of imperatives among intellectuals, paralleling findings in studies of English adult-to-child speech. A brief bibliography and data charts and tables are appended. (MSE)

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THE USE OF QUESTIONS IN MANDARIN ADULT-TO-CHILD SPEECH:
EVIDENCE FOR SOCIAL CLASS DIFFERENCES

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Paper presented at Boston University Conference on Language Development,
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THE USE OF QUESTIONS IN MANDARIN ADULT-TO-CHILD SPEECH: EVIDENCE FOR SOCIAL CLASS DIFFERENCES

Twila Tardif, Yale University

The data that I plan to present today are preliminary results from a larger study investigating the use of questions by Mandarin-speaking caregivers when speaking to their toddlers. The issue that I am interested in is what is the nature of adult-to-child speech in Mandarin Chinese, and how might differences in adult-to-child speech across different caregivers or groups of caregivers have an effect on their children's language development?

The notion that adult-to-child language can have an impact on the children's acquisition of their native language may be obvious to the point of banality. What is not obvious, is whether or not specific differences in adult-to-child speech from one caregiver to another will result in corresponding differences in children's language development. One factor that has been looked at extensively in English and seems to result in rather robust differences in children's language development is caregivers' use of questions. Specifically, English-speaking mothers who ask more questions tend to facilitate their children's learning of auxiliary verbs (Hoff-Ginsberg, 1985, 1991; Newport, Gleitman & Gleitman, 1977). By contrast, a parent's frequent use of imperatives is supposed to have a negative effect on their child's language development.

What is of particular interest in the present study is that both social class and cultural differences have been found in adult's use of questions when speaking to their language-learning children. Namely, mothers from working class families in the

United States do not ask as many questions of their infants and toddlers as do mothers from upper-middle class families. In addition, Japanese mothers typically ask fewer questions of their infants and toddlers and are generally much more directive of them than their class-matched American, English-speaking counterparts. However, question-asking and directiveness on the part of Japanese adults appears to bear no relationship to their children's language learning (Clancy, 1985), whereas it has a very consistent effect in English.

The questions for the present study, therefore, are what might we expect from Chinese caregivers and what effects might Chinese-speaking parents' use of questions have on their children's acquisition of language? On the one hand, China could be argued to be culturally very similar to Japan with a very strong and authoritarian parenting style. On the other hand, the grammar of Chinese questions while different from both English and Japanese bears a much closer resemblance to English in that it actually stresses verbs and auxiliaries in certain of its question forms. Thus, we might expect that Chinese parents' use of questions may indeed have a positive effect on their children's learning of verbs and auxiliaries. How social class might impact on a "Chinese" pattern of adult-to-child speech and caregiving is an issue that until the present research has not yet been investigated.

Today's discussion, therefore, will focus on the social class differences in Mandarin caregiver-to-child speech themselves.

If what we are looking at is a general cultural and linguistic pattern of caregiving and adult-to-child speech, then we would expect little or no differences

between social class groups. On the other hand, if Chinese caregivers' styles of interacting with their toddlers are based not only on a broader cultural pattern of speaking to children, but also on a class- or education-related pattern of using certain utterance types more than others, then we would expect to also find social class differences within the Chinese sample.

Methods

Subjects --The Families

Ten children and their families were selected from immunization records at three local hospitals in Beijing, China. The selection criteria were as follows: (1) the children were to be between the ages of 21- to 23-months at the beginning of the study; (2) their parents must be native speakers of Mandarin and, preferably, natives to the city of Beijing; and (3) both parents received formal education which was either (a) high school level or below (for workers) or (b) college level or above (for intellectuals)¹.

The data I will present today were taken from recordings made during the first and the fifth months of the larger study, which I will describe in somewhat more detail in just a moment.

Subjects --The Children

At the beginning of the study, an effort was made to equate both the age and the gender distribution of the subjects in each of the social class groups. Thus, each

¹ "Workers (gongren) and "intellectuals" (zhishifenzi) are two social classes in Chinese society which can be considered comparable to lower and upper middle class American samples as defined by educational and occupational status, but not income.

group had four males and one female who at the beginning of the study, had an average age of 21 months and 23 days (See Table 1 for details).

INSERT TABLE 1 ABOUT HERE

Subjects --The Caregivers

Caregiving in China is unlike what one might find for many white, English-speaking families in the United States. Rather than having a single caregiver who stays at home with the child, Chinese children are exposed to multiple caregivers who each play significant and overlapping roles in the child's daily life (see also, Sidel, 1982). It is important to note in this context that the large majority of both Chinese men and women have full-time jobs outside of the home which make them unavailable to their children and, in some cases, even to their grandchildren for large portions of every day.

The "caregivers" for each of the children in the study, therefore, included not only the children's mothers and/or fathers, but also grandparents or great-grandparents, live-in nannies, aunts who came to the house everyday for lunch or dinner and, whenever a passing adult felt in necessary, neighbors or even complete strangers. For the purposes of my data analysis, however, only the speech of caregivers who were in frequent interaction with the child and performed caregiving activities such as feeding, dressing, bathing, and playing with the child on a regular basis were classified as active caregivers. It is these caregivers who interacted with

the children on a regular basis whose data I pooled in order to get an understanding of the nature of adult-to-child speech for each of the children, even though there may well be differences in the speech styles of different types of caregivers (i.e., mothers vs. fathers, parents vs. grandparents, etc.).

Procedure

All visits were conducted by a non-native but fluent speaker of Mandarin who was sometimes accompanied by a Beijing native research assistant. Each visit was scheduled at the convenience of the child's family with the only condition that the visits were to be spaced about 2 weeks apart and that the family and the child were asked to do whatever they normally do at that time of day. Note that the person who was defined as the child's primary caregiver was not always the child's mother. In many cases, a child had more than one caregiver and in these situations, the utterances of all of the child's caregivers were recorded and transcribed.

Visits were audiotaped with a Sony WM-BF67 walkman-type recorder that the child's main caregiver for that particular day wore in a fanny pouch, with a tie-clip microphone that the caregiver attached to his or her clothes somewhere on the upper chest. In addition, each child wore a wireless microphone and carried their own transmitter in a small backpack which they wore throughout the visit.

Transcribing

The tapes from each visit were first transcribed into the pinyin system of romanized Chinese spelling by trained undergraduate and graduate students (all native speakers of Mandarin, and most of whom were Beijing natives) from one of

three Beijing universities. After initial transcription, the tapes were then listened to by the researcher and entered into the computer for analysis. Any disagreements between the researcher and the student transcribers were resolved by playing the fragment to at least one other native Chinese speaker and entering the form that was agreed upon by at least two of the listeners. If no agreement could be reached, the fragment was deemed uninterpretable.

The Database

As an aside, I would like to mention that I have actually collected recordings from these families once every two weeks, for a total of twenty-four weeks (approximately five months), resulting in at least 12 recordings for each of these ten families. Of these twelve recordings, six recordings (or one per every four weeks) have already been transcribed by native speakers of Mandarin. I am currently in the process of cleaning up and entering these transcripts into a computer database that I will then be using for future analyses on this corpus. The data that I am presenting today, therefore, represent only a small fraction of the data that are available from these families. Nonetheless, back to today's issues...

Coding

Child directed speech for each transcript was examined with the help of a computer program which recognized words and grammatical particles from my transcripts and which could calculate the length of each utterance. Utterances were then coded into questions, declaratives, imperatives, single particle questions and declaratives, and uninterpretable utterances (see Table 2 for a complete list of the

INSERT TABLE 2 ABOUT HERE

Scoring

MLUs were calculated for the children by averaging the lengths of all interpretable utterances, regardless of the intended listener, for each transcribed visit. A similar calculation was performed for each of the adult speakers, but only the data from active caregivers speaking directly to the child will be discussed today. The frequencies of each type of utterance were then computed for each adult to child pairing and were also summed across all caregivers for a given visit.

Results

MLU --children

Overall, the Intellectuals' children had somewhat longer MLUs than the Workers' children, as shown in Table 1. The average MLU computed over both Time 1 and Time 2 recordings was 2.27 (SD = 0.39) for the Intellectuals' children, and 1.72 (SD = 0.49) for the Workers' children. However, this difference was only marginally significant, $t = 1.96$, $p < .10$. This similarity in MLU, particularly at Time 1, is important, primarily because these children were selected to be matched for age, without regard to MLU. And yet, unlike the American data, 21-month olds from these Chinese social groups appear to have relatively similar utterance lengths.

As would be expected, the children's MLU increased from Time 1 (M = 1.74,

SD = 0.45) to Time 2 (2.25, SD = 0.46), and this was statistically significant, $t = 2.51$, $p < .05$.

MLU --caregivers

The overall mean lengths of utterances for the Workers and the Intellectuals were very close. If you refer to Table 1 on your handout you can see that for the intellectuals, it was 3.85 (SD = 0.42), and for the Workers was 3.55 (SD = 0.47). These were differences in the MLU of the caregivers were not significant, whether considered across social group, time, or for social group at each of Time1 and Time2.

Overall Frequency of Utterances

Although there was a tendency for both the Intellectual caregivers and their children to produce more utterances throughout the hourlong visits, neither of these differences were significant. Similarly, although there was also a tendency for both caregivers and the children to speak more in the later visit than in the first visit, these differences were also not significant. Again, the reader is referred to Table 1 for a closer examination of these means and their differences.

Frequency of Caregiver-to-Child Questions, Declaratives, and Imperatives

What is more important than just the overall frequency of utterances, however, is the specific pattern of utterances across caregivers in the two social groups. There are two issues that we should be concerned about. First, are questions of high frequency in the adult-to-child speech of the Chinese caregivers? Second, are there social class differences in the use of questions and/or imperatives, which would replicate the English findings and suggest that there is something about social class

in both the American and the Chinese samples which may be contributing to the use of one style of conversing with children over another.

As shown on the next transparency, and in Figure 1 on your handout, Intellectual caregivers issued both more declaratives ($\underline{M} = 328.60$, $\underline{SD} = 129.71$) and more questions ($\underline{M} = 231.90$, $\underline{SD} = 65.85$) than did the Workers ($\underline{M} = 235.80$, $\underline{SD} = 98.97$ and $\underline{M} = 168.50$, $\underline{SD} = 55.77$ for declaratives and questions, respectively). Workers, on the other hand, issued many more imperatives to their language learning children ($\underline{M} = 287.60$, $\underline{SD} = 78.61$) than did the Intellectuals ($\underline{M} = 179.50$, $\underline{SD} = 41.54$). The differences for both questions and imperatives were statistically significant, with $t = 2.32$, $p < .05$ and $t = 3.84$, $p < .01$, respectively. The difference for declaratives, while also quite large, was highly variable, and only approached significance, $t = 1.79$, $p < .10$. A Chi-squared analysis of these frequencies was performed and resulted in a highly significant pattern of difference, $\chi^2 = 487.53$, $p < .001$. This pattern is almost identical to Hoff-Ginsberg's (1985, 1991) findings for English, despite enormous cultural and linguistic differences between the American and Chinese families.

INSERT FIGURE 1 ABOUT HERE

In order to examine the issue of whether this differential use of questions and auxiliaries was a pattern that suggested overall differences in the speech patterns of these two social class groups or whether it was something specific to caregiver-to-

child speech, I examined the speech of these same caregivers to other adults during each of these hourlong visits. Unfortunately, there really was not a lot of adult-to-adult speech during these visits, but the small amount that did occur suggests that the social class differences in adult-to-child speech are not supported by similar differences in adult-to-adult speech from these same caregivers when talking with each other. Thus, this differential pattern in the use of questions and imperatives appears to be a specific response to the tasks of childrearing that caregivers in each of these social groups set for themselves and display when speaking to their children. I would like to do some analyses of some of my other tapes with more adult to-adult speech, however, in order to make a strong claim about this, given that it also appears to be contrary to what has been found in English-speaking populations.

Social Class Differences in Types of Questions

Given that Intellectual and Worker Caregivers ask a different number of questions of their language-learning toddlers overall, might they also reveal differences in the types of questions that they ask?

Questions were further divided according to their syntactic structure. I will not go into detail about these categories for the present purposes, but they are presented as follows in Table 2: (1) Intonation only questions (e.g., zhei4 shi4 niao3 ?, "it is a bird?"); (2) Questions with final particles that are not normally used or are ambiguously used as question particles, (e.g., "chu1 qu4 .a ?", "going out SFP ?") (3) Tag questions with final particles that are not normally used or are ambiguously used as question articles, (e.g., "chi1 fan4, hao3 .ba?", "(Let's) eat, okay SFP ?"); (4) Tag

questions ending in a verb-not-verb type of question (e.g., "bie2 dong4, hao3 bu4 hao3 ?", "Don't touch, okay not okay?"), (5) Tag questions ending in a question particle (e.g., "bu4 zou3 .le, shi4 .ma ?", "(it's) not going, is (it) QP ?"); (6) Question particle questions (e.g., hao3 .ma?, "okay QP-ma ?"; "nei4 mao2mao cao3 .ne ?", "the+ fuzzy grass QP-ne ?"); (7) Verb-not-Verb questions (e.g., hao3-bu4-hao3?, "good-not-good?"); (8) Question-word questions (e.g., zhei4 shi4 shen2me?, "what's this?";); (9) Disjunctive questions (e.g., yao4 zhei4ge hai2shi4 neige?, "(Do you) want this or that?"; and (10) Completed Action Questions ("ting1-jian4 mei2 you3 ?", "(you) hear not have?").

Both the means and percent frequencies for each of the question categories from Table 2 are presented in Table 4. And, as we can see from this Table, there do not appear to be any differences in the use of particular question forms for these two groups.

Discussion and Conclusions

Despite a rather small sample size and wide variation in activity setting and in the number and identity of speakers considered to be "caregivers" from one visit to the next, these data present clear social class differences in the relative use of different types of utterances when talking to children. Specifically, my results mirror the English-language data reported by Hoff-Ginsberg (1985, 1991) in finding more frequent uses of questions for Intellectuals, or Upper-Middle Class caregivers, and less frequent use of Imperatives when compared with Workers, or Lower-Middle Class caregivers, when speaking with children of the same age and level of language

development. This was true despite the finding of no significant differences in either the MLU of caretakers or of children at Time 1.

Given that my finding of social class differences in utterance type corroborates the English finding, but that the relative frequencies of particular types of questions do not seem to differ for these two groups, it will be interesting to examine the effects of these utterance types on children's language development in these two social groups. Of particular interest is whether or not the Chinese data will show a relationship between adult use of questions and child increases in auxiliary use (or, for Chinese, more likely verb use since verbs are repeated and often receive prosodic stress in some Chinese question forms) similar to those found by Newport, Gleitman and Gleitman (1977) and by Hoff-Ginsberg (1985, 1990).

Another issue would be to look at the nature of adult-to-child speech when these children are much more competent speakers of the language, but when still defined as "young children" by their caregivers. Moreover, in order to claim that this is a pattern induced by potential differences between the social groups' definition of the toddler and what they perceive to be the goals of both their children's development and their own tasks as caregivers (cf. Heath, 1983), it would seem an important next step to actually examine the caregivers' beliefs more directly.

Plans for Future Analysis and Research

As I mentioned earlier, the results I presented today are from some preliminary analyses that I have conducted with this corpus. It is both a very new and a very rich corpus that I plan to do several follow-up analyses on, not the least

of which is to examine the stability of these differences across the entire time span of the study and to examine what effects they may be having on the children's language development. In addition, since there are still only very limited analyses of Chinese language acquisition, and since my corpus appears to be the largest corpus of 22- to 26-month-old Chinese children -- both inside China and out -- I plan to carry out general descriptive analyses on these data and to transcribe and computerize as many of these transcripts as possible. While I have not entered them into the CHILDES formats for reasons peculiar to Chinese --namely, the problem of homophones which makes Chinese both an interesting and a thorny language to study-- I am in the process of developing my own set of analysis programs that can be used on these data and would be happy to share the data and suggestions for analysis as more of it becomes available.

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Table 1: MLU and Age Comparisons

	Time One (n=5) mean (sd)	Time Two (n=5) mean (sd)	ALL mean (sd)
Child Age			
Workers	21;23 (21 days)	25;19 (23 days)	
Intellectuals	21;26 (20 days)	25;24 (19 days)	
Child MLU			
Workers	1.51 (0.45)	1.94 (0.47)	1.72 (0.49)
Intellectuals	1.97 (0.33)	2.56 (0.10)	2.27 (0.39)
Child N Utts			
Workers	368.0 (146.92)	436.8 (75.45)	402.4 (115.93)
Intellectuals	418.6 (247.62)	577.4 (225.48)	498.0 (238.44)

	Time One (n=5) mean (sd)	Time Two (n=5) mean (sd)	ALL mean (sd)
Caretaker MLU			
Workers	3.49 (0.49)	3.61 (0.49)	3.55 (0.47)
Intellectuals	3.87 (0.52)	3.83 (0.34)	3.85 (0.42)
Caregiv N Utts			
Workers	846.4 (289.46)	857.4 (96.46)	851.9 (203.49)
Intellectuals	858.8 (199.11)	906.6 (217.75)	882.7 (198.3)

Figure 1

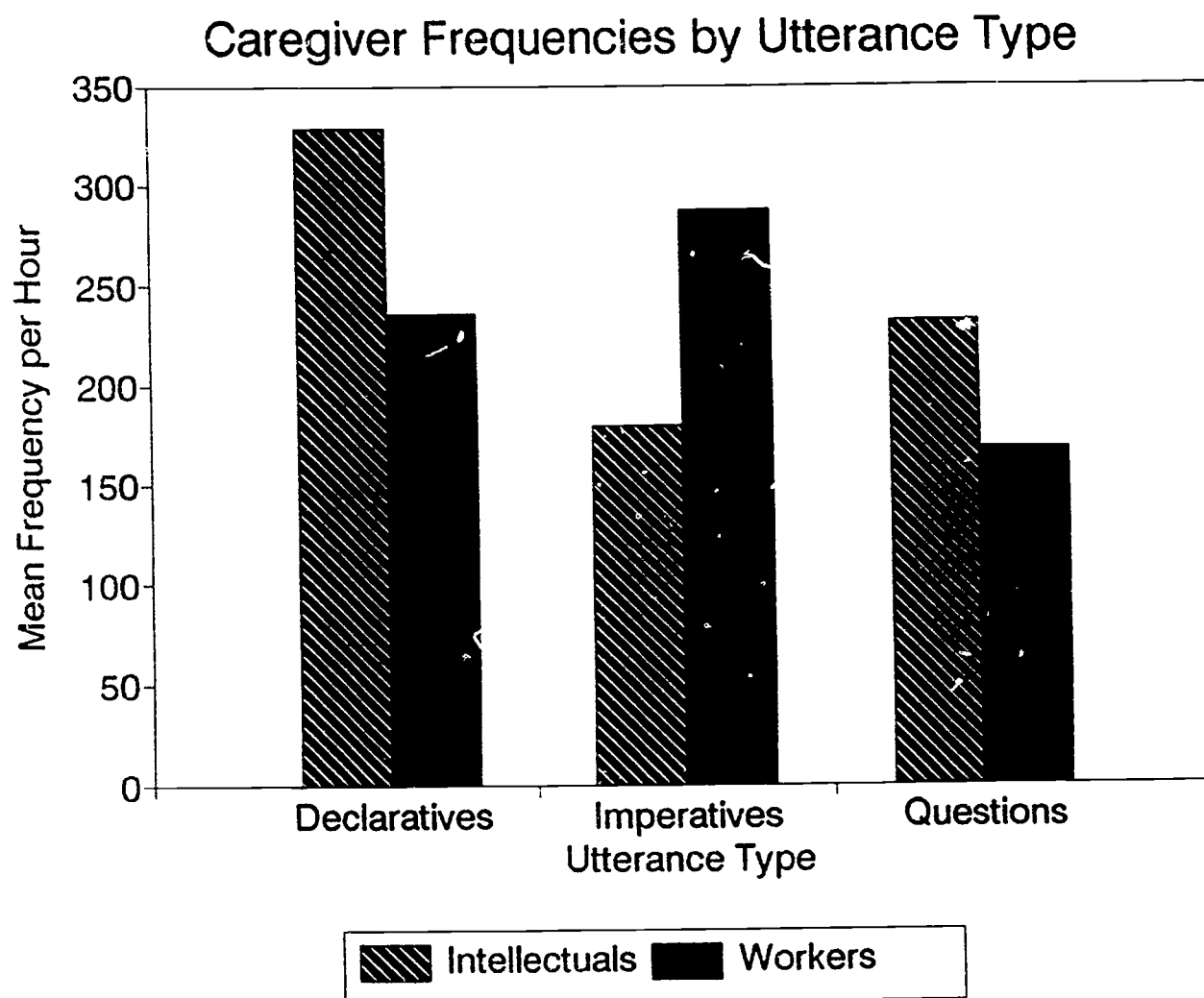


Table 2: Different Types of Utterances

1. Uninterpretable
2. Declarative
3. Imperative
4. Question
 - a) Intonation question:
zhei4 shi4 niao3 ?, "it is a bird?"
 - b) Non-Question particle question:
chui4 qu4 .a ?, "going out SFP ?"
 - c) Tag with non-question particle:
chi1 fan4, hao3 .ba?, "(Let's) eat, okay SFP ?"
 - d) Tag verb not verb
bie2 dong4, hao3 bu4 hao3 ?,
 "Don't touch, okay not okay?"
 - e) Tag question particle ("...", shi .ma ?)
bu4 zou3 .le, shi4 .ma ?,
 "(it's) not going LE, is (it) QP ?"
 - f) Question particle (".ma?")
hao3 .ma?, "okay QP-.ma ?"
 - g) Question particle (".ne?")
nei4 mao2mao cao3 .ne ?, "that fuzzy grass QP-.ne ?"
 - h) Verb not verb (V bu V ? V mei V ?)
hao3-bu4-hao3?, "good-not-good?"
 - i) Question Word (zenme ? nar ? shei ? ganma ?)
zhei4 shi4 shen2me?, "what's this?"
 - j) Disjunctive (A haishi B ?)
yao4 zhei4ge hai2shi4 neige?,
 "(Do you) want this or that?"
 - k) Completed Action (V mei2 you3 ?)
ting1-jian4 mei2 you3 ?, "(you) hear not have?"
5. Single particle utterance
 - a) Interjection (".aiyou", ".em", etc.)
 - b) one-word particle question/prompt (".en?")
6. Vocative ("mama", "XiXi", etc.)
7. Fragment (uncompleted, but well-formed and audible)

Table 3: Mean Frequency and Percentage of Question Types

QUES TYPE	WORKERS		INTELLECTUALS	
	Mean Freq	Pct Freq	Mean Freq	Pct Freq
Intonation	3.1	.02	4.7	.02
non QP	42.1	.23	46.5	.18
One-word	18.3	.10	24.4	.10
TAG, non QP	1.9	.01	6.0	.02
TAG, V-n-V	2.3	.01	9.9	.04
TAG, QP	3.4	.02	8.8	.03
QP = .ma	24.3	.13	37.6	.15
QP = .ne	5.5	.03	10.3	.04
V-not-V	11.1	.06	17.3	.07
Q Word	70.8	.38	87.7	.34
Disjunctiv	0.2	.001	1.3	.005
Compl Actn	3.8	.02	3.1	.01